EPCOS

SAW Components

Data Sheet B7820

Data Sheet

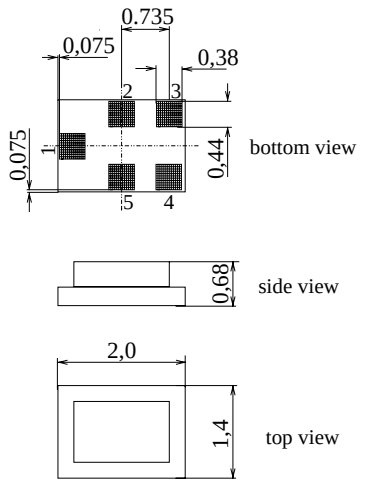
Features

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Excellent symmetry
- Impedance transformation from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12
- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)

Terminals

- Ni, gold-plated

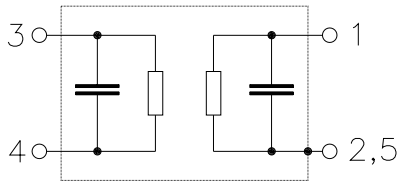
Chip sized SAW package QCS5C



Dimensions in mm, approx. weight 0,007 g

Pin configuration

1	Input, unbalanced
3, 4	Output, balanced
2, 5	Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B7820	B39941-B7820-C710	C61157-A7-A111	F61074-V8151-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	– 30 / + 85	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
DC voltage	V_{DC}	5	V	
Input power at GSM850, GSM900, GSM1800, GSM1900 Tx bands	P_{IN}	15	dBm	peak power of GSM signal, duty cycle 4:8

Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 150 Ω

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	1,9	2,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,8	1,4	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,0	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	2,1	2,3	
Output phase balance $\phi(S_{31})-\phi(S_{21})$					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance $(\lvert S_{31}/S_{21}\rvert)$					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	65	—	dB
880,0 ... 905,0 MHz		30	41	—	dB
905,0 ... 915,0 MHz		22	26	—	dB
980,0 ...1050,0 MHz		27	31	—	dB
1050,0 ...2775,0 MHz		50	64	—	dB
2775,0 ...2880,0 MHz		54	62	—	dB
2880,0 ...6000,0 MHz		50	60	—	dB

Characteristics

Operating temperature range: T = -10 to +80 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 150 Ω

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	1,9	2,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,8	1,8	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,0	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	2,1	2,3	
Output phase balance $\phi(S_{31})-\phi(S_{21})$					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance $(\lvert S_{31}/S_{21}\rvert)$					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	65	—	dB
880,0 ... 905,0 MHz		30	38	—	dB
905,0 ... 915,0 MHz		20	26	—	dB
980,0 ...1050,0 MHz		26	29	—	dB
1050,0 ...2775,0 MHz		50	64	—	dB
2775,0 ...2880,0 MHz		54	62	—	dB
2880,0 ...6000,0 MHz		50	60	—	dB

Characteristics

Operating temperature range: T = -30 to +80 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 150 Ω

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	1,9	3,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,8	2,1	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,0	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	2,1	2,3	
Output phase balance $\phi(S_{31})-\phi(S_{21})$					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance $(\lvert S_{31}/S_{21}\rvert)$					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	65	—	dB
880,0 ... 905,0 MHz		30	38	—	dB
905,0 ... 915,0 MHz		20	26	—	dB
980,0 ...1050,0 MHz		25	27	—	dB
1050,0 ...2775,0 MHz		50	64	—	dB
2775,0 ...2880,0 MHz		54	62	—	dB
2880,0 ...6000,0 MHz		50	60	—	dB

Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω and 200 Ω || 100 nH

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	1,8	2,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,8	1,4	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output phase balance $\phi(S_{31})-\phi(S_{21})$					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance $(\lvert S_{31}/S_{21}\rvert)$					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	65	—	dB
880,0 ... 905,0 MHz		30	41	—	dB
905,0 ... 915,0 MHz		22	26	—	dB
980,0 ...1050,0 MHz		27	30	—	dB
1050,0 ...2775,0 MHz		50	64	—	dB
2775,0 ...2880,0 MHz		54	62	—	dB
2880,0 ...6000,0 MHz		50	60	—	dB

Characteristics

Operating temperature range: T = -10 to +80 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω

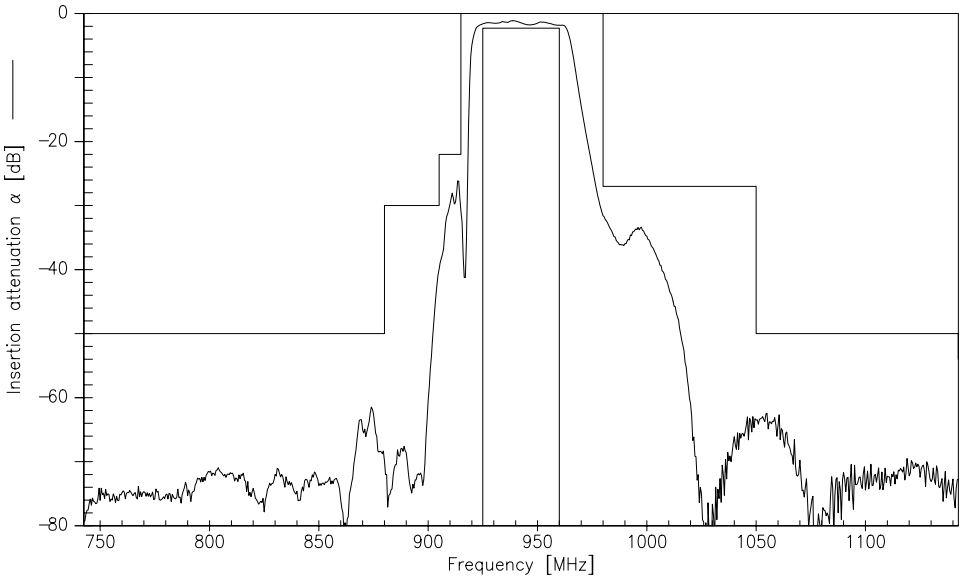
		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	1,9	2,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,8	1,8	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output phase balance $\phi(S_{31})-\phi(S_{21})$					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance $(\lvert S_{31}/S_{21}\rvert)$					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	65	—	dB
880,0 ... 905,0 MHz		30	38	—	dB
905,0 ... 915,0 MHz		20	26	—	dB
980,0 ...1050,0 MHz		26	28	—	dB
1050,0 ...2775,0 MHz		50	64	—	dB
2775,0 ...2880,0 MHz		54	62	—	dB
2880,0 ...6000,0 MHz		50	60	—	dB

Characteristics

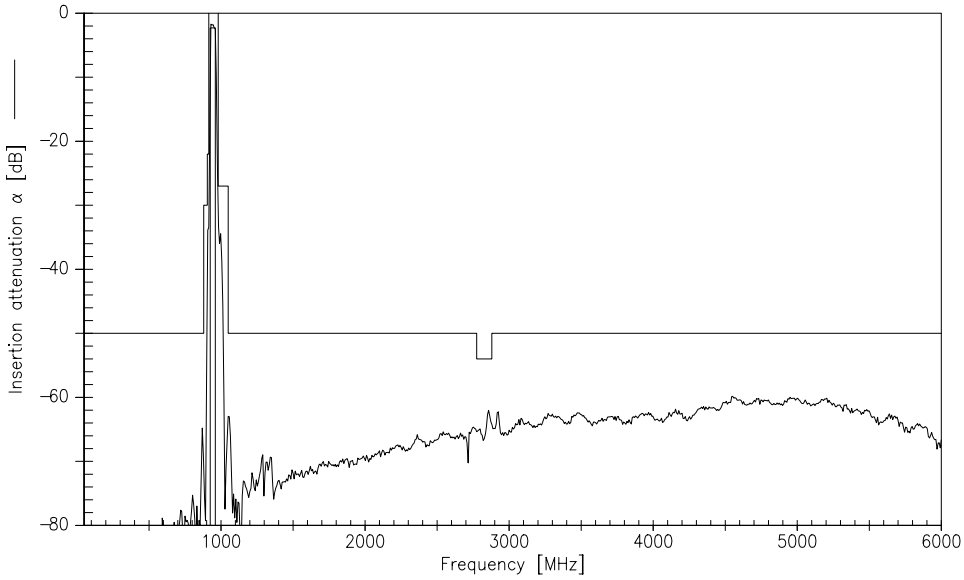
Operating temperature range: T = -20 to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω || 100 nH

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	2,1	3,1	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,1	2,2	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output phase balance $\phi(S_{31})-\phi(S_{21})$					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance $(\lvert S_{31}/S_{21}\rvert)$					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	65	—	dB
880,0 ... 905,0 MHz		30	38	—	dB
905,0 ... 915,0 MHz		20	26	—	dB
980,0 ...1050,0 MHz		25	28	—	dB
1050,0 ...2775,0 MHz		50	64	—	dB
2775,0 ...2880,0 MHz		54	62	—	dB
2880,0 ...6000,0 MHz		50	60	—	dB

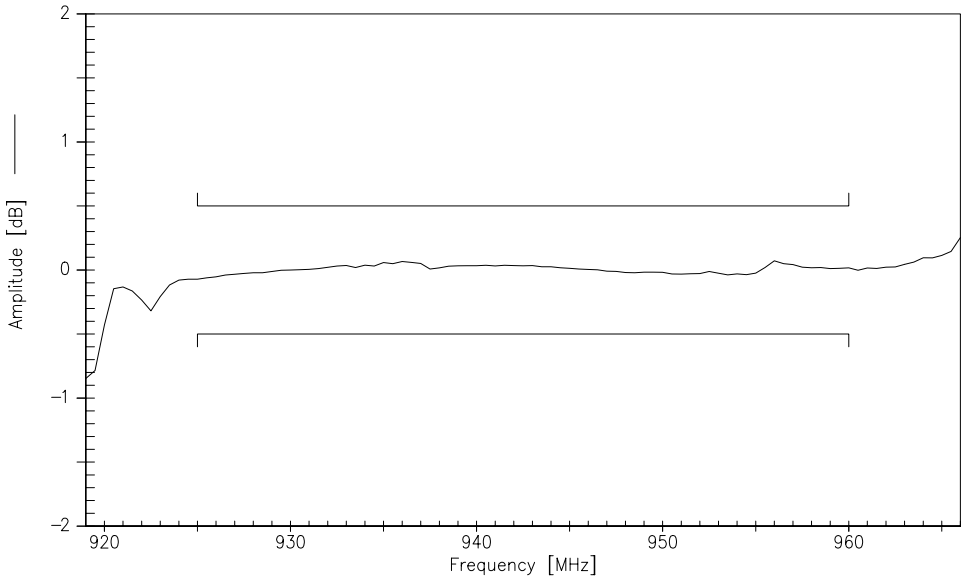
Transfer function



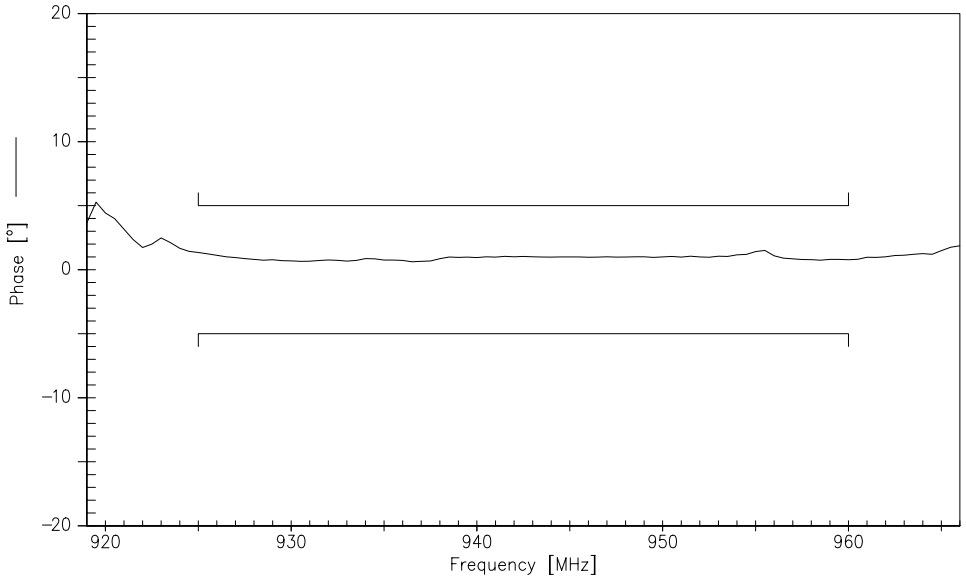
Transfer function (wideband)



Output amplitude balance ($|S_{31}/S_{21}|$)



Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, 81617 Munich, GERMANY

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.